

Data Portraits as Tools of Self-reflection and Awareness

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Abstract

This study focuses on the creative exploration of personal data as raw material for the creation of portraits, considering how our contemporary existence is constantly mediated by an expanding array of digital technologies, capable of recording various aspects of human life as digital data.

It starts by discussing the “informational nature of personal identity” according to Floridi (2011), regarding how identity can emerge from data, and addresses the concept of “data portrait”, as defined by Donath (2017), as an expression of identity based on data. It then approaches the notion of “technologies of the self” as described by Foucault (1988), in order to explore how data portraits can be regarded as mechanisms of self-governance and a means of attaining human agency through data.

The aim of the study is to promote discussion on the representation of identity, at a time when increasingly amounts of personal data are accessible. We seek to highlight the relevance of data portraits as creative experiments around the representation of personal identity and the way in which the self can, in turn, be shaped by digital culture.

Keywords: Personal data, data portrait, identity, technologies of the self, human agency.

Introduction

Our contemporary existence is continuously mediated by digital technologies and from this mediation large sets of personal data emerge; be it data resulting from direct human interaction with these technologies or data passively registered by sensors embed on digital devices that, regardless of our awareness, constantly collect data pertaining to their user’s actions or surroundings. In this interconnected world, large amounts of data can be related to a specific individual, as part of their digital footprint. Consequently, each of us has a unique data trail, which can be parsed in order to produce information and visualized to express meaning.

Motivated by the expressive potential inherent to these data trails, this research aims at exploring how data portraits can be used as a tool of self-reflection and awareness. To this end, it addresses how personal data can become an instrument of self-observation, allowing us to better understand ourselves and, at the same time, make sense of others. It also considers how our daily use of common digital technologies structures the way in which we look at ourselves, as a mediated self-observation process.

Following these ideas, this study focuses on the creative exploration of methods of self-representation through digital data, following a theoretical and practice-based approach. It begins by discussing the “informational nature of personal identity” (Floridi 2011) and the concept of “data portrait” (Donath 2017), which are then framed as “technologies of the self” (Foucault 1988) or mechanisms of self-governance through data. This conceptual framework also informs the design and implementation of *Data Self-Portrait*, which creatively explores the visualization of personal data that is automatically collected by digital technologies of everyday use, in order to reflect one’s identity.

In this manner, this study seeks to promote discussion on how portraiture can be reconceptualized, as informed by the creative possibilities of digital technologies and personal data.

The self as information

The current dissemination of communication technologies is causing several changes in our daily lives, as globalization promotes the replacement of traditional patterns of identity, such as rigid gender roles, religion, or the nuclear family, by self-chosen ones. Consequently, people feel the need to maximize “their life chances in the context of uncertainty and unpredictability of contemporary life” (Lupton 2014). This “liquid modernity”, as described by Bauman (2000, 31-32), leads to a normative mindset with an emphasis on shifting or impermanence, rather than on stability, and to the acknowledgement that the construction of the self is an ongoing endeavour and also a “creative enterprise” (Hernández-Ramírez 2017).

The proliferation of computational technologies then creates new affordances for the development of our identities, in particular, when considering identity as an informational structure, as suggested by Floridi (2011). According to the author, “the identity of the self is grounded in the unity of consciousness and the continuity of memories”, being regarded as an “auto-biographical artefact” (Floridi 2011, 9). So, following this informational approach, identity can be characterized as an “evolving informational structure” based on personal narratives.

The use of digital tools such as smartphones, personal computers, mobile cameras, online platforms, mobile apps and wearable devices enables us to track any aspect of human life and record it as digital data. As expressed by Wolf (2010) in *The Data-Driven Life*, with the advent of the Quantified Self movement, “numbers are infiltrating the last redoubts of the personal. Sleep, exercise, sex, food, mood, location, alertness, productivity, even spiritual well-being, are being tracked and measured, shared and displayed”. Therefore, personal narratives that were previously based, mostly, on qualitative information, can now arise from multiple layers of measurable quantified data.

This tendency towards quantification is becoming widespread, as technologies become smaller, wearable, and increasingly unnoticed while collecting personal data, which mediates personal identity. In this manner, the human senses and memory are being augmented by the affordances of technologies, creating “human-digital-assemblages” that work together “to make new things (‘information’)” (Lupton 2018).

Data portraits

In this context, data portraits emerge as a product of the quantification and visualization of personal data, produced in the course of daily experiences, and automatically captured by digital technologies of personal use. They emerge as visualizations that are conceived to deliver back to users their trails of personal data, which become a kind of digital fingerprint that is unique to each individual. As such, Donath (2017) defines data portraits as “depictions of people made by visualizing data by and about them”.

The emergence of data portraits is then tied to a cultural and ideological shift in the representation of identity since they prioritize “qualities that are not directly observable” relating to actions, behaviours and ideas, as socially relevant information that cannot be directly deduced from appearance (Donath 2001). Thus, appearance loses its value and significance to the expressive potential of data as a raw material for portraiture.

Being tied to the representation of the subject’s behavioural traits, data portraits are also the result of an interdisciplinary practice that involves portraiture, autoethnography, data collection, visualization and computation (Sampaio, Ribas and Ângelo 2019).

They can be seen as an extension of the ways in which the portrait has been gradually reinvented, accompanying technological and cultural advances and following a tendency to detach itself from the mimetic representation of the physical body, by employing enumeration techniques and personal inventory as a form of portraiture. As such, the visibility of data portraits tends towards abstraction, as the product of the visualization of persona data, collected through a process of systematic self-observation, which is mainly done in a passive way.

Although tending towards abstraction, data portraits can also be coupled with a notion of “digital realism” (Min 2015), since the data they resort to is extracted from the real world. In this sense, they are no longer the result of a mimetic representation of the subject’s physical appearance, but rather a symbolic organization of personal data into a visualization system that produces “informational images” (Renaud 2004).

The resulting visualizations often involve the representation of time, as means of expressing change, but also a distance from an analytical stance, concerned with legibility, favouring a subjective expression. And when taking advantage of the affordances of computational medium, these visual outcomes can also have dynamic properties or be open to interactive exploration.

So, although different from traditional portraits, data portraits evoke the same functions of their classic counterparts, as essentially tied to the representation of the subject before the other and/or before himself. On one hand, data portraits can fulfil a 'proxy' function. Namely, by representing individuals in virtual environments, while revealing their behavioural patterns (rather than appearance) and having an impact on others act towards them. On another hand, data portraits can act as a "data mirror, a portrait designed to be seen only by the subject, as a tool for self-understanding" (Donath et al. 2014). As a vehicle for the self-exploration of identity, the portrait becomes a data self-portrait, reflecting patterns of self-directed behaviour.

Additionally, and by involving the re-appropriation of personal data, data portraits can also fulfil a political role by drawing attention to the loss of control over private information. Finally, data portraits can also promote an affective tie with one's personal data, as an effect of its instantiation and due to its biographical qualities.

In sum, data portraits can be understood as representations of subjectivity but are also visualizations of a subjective nature, regarding design choices on what is to be represented, and how, as well as to what end or expression.

Project: *Data Self-Portrait*

Drawing on these ideas, we developed a *Data Self-Portrait*¹ that explores the expression of one's identity as it evolves through time and according to our digital fingerprint, while also reflecting on how technologies of the self are conceived to promote self-reflection and awareness.

We began by defining which data could have ethnographic value and would cover different areas of personal experience. Then, we selected data from three distinct domains: biometric, data related to surrounding environment, and data related to daily activities. The data collection resorted to sensors embedded in devices of daily use, such as a cardio bracelet our mobile phone, self-tracking applications and also records from our web browser. It was important that the data collection could be automated in order to render the self-observation process more fluid.

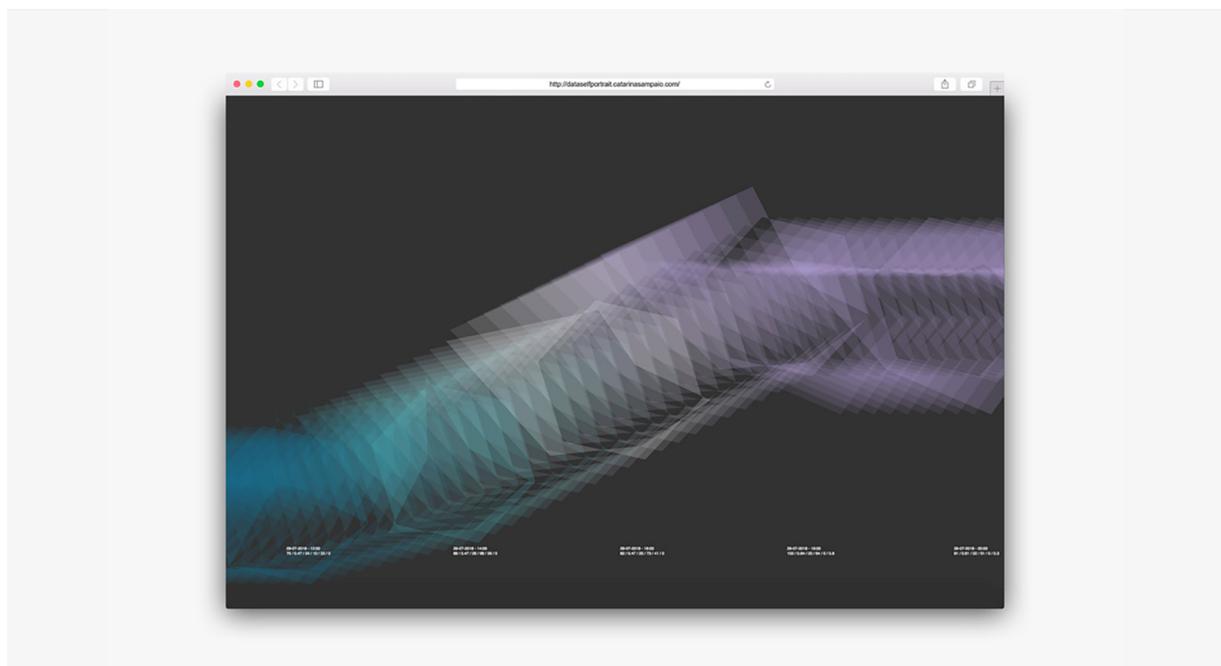


Figure 1: *Data Self-Portrait*, screenshot of the dynamic visualization.

In this manner, *Data Self-Portrait* is designed to represent everyday life by comparing each measurement of data with the total average of values, so that the system highlights variations in daily routine, unveiling hidden patterns of the subject's daily life. The outcomes of the project are essentially contemplative, in

¹ Website of the project: <http://dataselfportrait.catarinasampaio.com/>. Please notice that the website is optimized for desktop and for the web browsers Google Chrome and Mozilla Firefox.

alignment with classic portraits. However, and since these portraits condense large amounts of information, we also wanted to allow the interactive exploration of the timeline. So, the geometric forms highlight the quantitative nature of the input data and colour also plays an important role in the perception of its variations.



Figure 2: *Data Self-Portrait*, photo of the printed publication.

With this approach, we were able to create complementary expressions of the same self-portrait comprising a printed publication, a physical output and a dynamic visualization. While the printed publication contextualizes the development of *Data Self-Portrait*, the physical output seeks to evoke aspects of traditional portraiture such as the crystallization of a moment in time, materialized for future contemplation. In contrast, the dynamic visualization is an evolving self-portrait that unfolds in time.

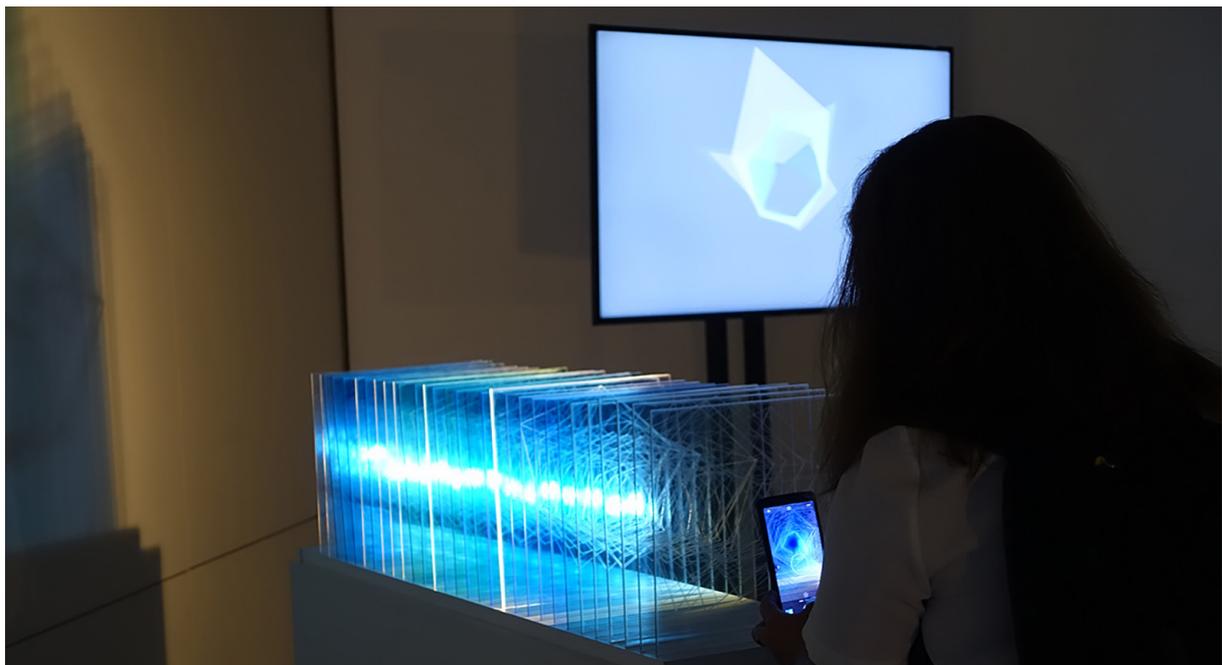


Figure 3: *Data Self-Portrait*, installation at ARTECH – 9th International Conference on Digital and Interactive Arts.

As expressed by Morley (2007, 96-97) when referring to autoethnographic art projects, the point of this kind of exercise is not “to discover the new, the grandiose, the striking, the exceptional or the unexpected, but rather to (re)discover, or perhaps see well for the first time, the realm of that which is already familiar and, thus, largely unseen” given that “few of us give enough attention to what is truly daily in our daily lives, to the banal habits, settings and events of which those lives almost entirely consist”.

Data portraits as technologies of the self

Data portraits are, therefore, inextricably linked to the concept of self-tracking, as relying on digital technologies to automate the collection and visualization of highly detailed sets of personal data. Self-tracking is often considered a way to improve human life, allowing people to make better choices for themselves based on information about their own behaviour. Lupton (2018) goes further to define self-tracking as “a reflexive mode of practice that is adopted by people as a way of learning more about themselves by noticing and recording aspects of their lives”. So, this practice is often viewed as a way of achieving knowledge and awareness or enabling people to take control over their lives and, therefore, seen as a form of attaining human agency through data.

According to this idea, we can couple this self-observation process with the notion of the “technologies of the self”, as described by Foucault, or as “specific techniques that humans use to understand themselves” (Foucault 1988, 18). When studying the mechanisms by which human beings govern themselves, or “how an individual acts upon himself”, Foucault argues that part of a citizen’s social responsibility is to “take care of himself”, in terms of health, wisdom and overall wellbeing. So, this processes of acting upon oneself, as to reconfigure selfhood, incorporates “neoliberal values of self-responsibility for life”, which also entails “viewing selfhood as an entrepreneurial project” (Lupton 2018).

Foucault then sees technology as an abstract concept that encompasses the extension of human capabilities and defines technologies of the self as mechanisms “which permit individuals to effect (...) a certain number of operations on their own bodies and souls, thoughts, conduct, and way of being, so as to transform themselves” (Foucault 1988, 18). Therefore, data portraits can be regarded as technologies of the self, or as mechanisms of self-observation that use computational technologies to enable the expansion of our senses and memory, therefore, also enabling new forms of human agency and self-governance through data.

Conclusion

In conclusion, we can say that by addressing the informational nature of personal identity, which emphasizes that “we are our data” (Lupton 2016), this paper highlights how data portraits can be seen as technologies of the self that are able to amplify human agency through data, while promoting self-knowledge and enabling self-governance.

In this manner, this study also seeks to reflect on how data portraits can promote a reconceptualization of portraiture as a representation genre — one that is shaped by the creative possibilities of the computational medium and that becomes more attuned to our contemporary mode of living immersed in data.

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